

What the invention claimed is:

1. A weaving machine comprising
a magnetic traction device, said magnetic traction device
comprising two magnetic tracks arranged in parallel at two sides
5 of warp threads, a set of magnetic traction plates disposed at
two sides of warp threads and defining a contained angle, a
plurality of main coils respectively disposed at a bottom side of
each of said magnetic traction plates and respectively sleeved
onto said magnetic tracks and adapted to reciprocate along said
10 magnetic tracks without contact when alternatively reversely
connected with electric current, said magnetic traction plates
each having two end magnets and an intermediate magnet
respectively disposed at each of two opposing inner sides, said
end magnets having magnetic lines of force extending from an
15 outer side toward an inner side, said intermediate magnetic
having magnetic lines of force extending from an outer side
toward an inner side and from an upper side toward a bottom
side, said magnetic tracks each having a buffer spring member at
each of two distal ends thereof;
20 a shuttle set in warp threads within the contained angle of
said magnetic traction plates and adapted to move weft threads
over warp threads, said shuttles comprising two sloping

sidewalls, two end magnets respectively disposed at front and rear sides of each of said two sloping sidewalls and adapted to act with the end magnets at said magnetic traction plates to keep said shuttles be suspended within the contained angle of said
5 magnetic traction plates, an intermediate magnet disposed between the two end magnets at each of the two sloping sidewalls and adapted to produce a magnetic repulsive force against the intermediate magnets at said magnetic traction plates to keep said shuttle away from an inner surface of said magnetic
10 traction plates;

a set of magnetic rails symmetrically provided at said main coils at a bottom side corresponding to the length of said magnetic tracks; and

a set of adjustment plates respectively pivoted to said main
15 coils at a bottom side and adapted to adjust the contained angle of said magnetic traction plates, said adjustment plates each comprising a plurality of lugs respectively pivoted to respective lugs at said main coils, and adjustment screws respectively fastened to said lugs and adapted to adjust the pitch between
20 said adjustment plates and said magnetic rails, said adjustment plates each having a plurality of magnets mounted thereon and adapted to produce a magnetic repulsive force against said

magnetic rail to keep said adjustment plates out of contact with said magnetic rails;

wherein when electric current is connected to said main coils, a magnetic push force is produced between said main coils
5 and said magnetic tracks to push said main coils and said magnetic traction plates along said magnetic tracks without contacting said magnetic tracks and simultaneously to carry said shuttle, causing said shuttle to move weft threads over warp threads.

10 2. The weaving machine as claimed in claim 1, further comprising two supplementary coils respectively disposed at front and rear sides of each said main coil and constantly electrically connected to support said main coils on said magnetic tracks without contacting said magnetic tracks, said
15 two supplementary coils being connected with reversed current to offset push force with each other.

3. The weaving machine as claimed in claim 1, further comprising a plurality of photoelectric sensors respectively disposed near two distal ends of said magnetic tracks and
20 adapted to cut off power supply from said main coils when said magnetic traction plates approaching one end of said magnetic tracks.

4. The weaving machine as claimed in claim 2, wherein 1,
wherein said buffer spring members each have a rear end
mounted with a magnetic ring and a magnetically nonconductive
metal ring; said supplementary coils each are provided with a
5 magnetic ring and a magnetically nonconductive metal ring
corresponding to the magnetic ring and magnetically
nonconductive metal ring at each said buffer spring member, the
magnetic rings of said supplementary coils being adapted to
produce a magnetic repulsive force against the magnetic rings at
10 said buffer spring members when said magnetic traction plates
approaching one end of said magnetic tracks.

5. The weaving machine as claimed in claim 3, wherein
said main coils and said supplementary coils having a plurality
of beveled retaining portions; said magnetic tracks each
15 comprise a magnetic retainer at each of two distal ends thereof,
said magnetic retainer comprising a latch having a beveled front
end and adapted to engage the beveled retaining portions of said
main coils and said supplementary coils when said magnetic
traction plates moved to one end of said magnetic tracks.

20 6. The weaving machine as claimed in claim 1, wherein
said main coils each are covered with a hollow cylindrical
covering, said hollow cylindrical covering having a filling hole

through which liquid nitrogen is filled into said hollow cylindrical covering to keep said main coils in a low temperature working condition.

7. The weaving machine as claimed in claim 1, wherein
5 said shuttle is made of a magnetically nonconductive lightweight material, having a double-beveled bottom wall such that a flow of current is moved along two opposite sloping sidewalls of said shuttle and gathered at said double-beveled bottom wall to lift said shuttle during reciprocating motion of
10 said shuttle with said magnetic traction plates along said magnetic tracks.

8. The weaving machine as claimed in claim 1, wherein said magnetic tracks each comprise a double-beveled stop plate at each of two distal ends thereof on the middle, said
15 double-beveled stop plate having a plurality of magnets disposed at two sloping sidewalls thereof adapted to produce a magnetic repulsive force against the magnets at said shuttle to keep said shuttle away from said magnetic tracks when said shuttle is stopped from movement.

20 9. The weaving machine as claimed in claim 1, further comprising a central control box adapted to control power on/off at said main coils and reversing of electric current to said main

coils.